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UNDESCRIBED SPECIES OF NEARCTIC TIPULIDAE (DIPTERA) VII

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The new species described herewith are from California, Idaho, and the Canadian North West territories, as discussed under the individual descriptions. The types are preserved in my personal collection of these flies.

Tipula (Pterelachisus) horningi, n.sp.

Size small (wing about 9 mm.); general coloration of thorax brownish yellow, conspicuously patterned with dark brown, including a narrow median vitta on scutum and scutellum; wings grayish white, the outer radial field slightly darker; abdomen obscure yellow, both the tergites and sternites with a continuous brownish-black central stripe, lateral tergal borders with interrupted similar darkenings; male hypopygium with apex of each tergal lobe produced into a slender blackened spine; ninth sternite with an arcuated blackened lobe; inner dististyle with beak slender, outer basal lobe an arcuated horn that narrows into an acute spine.

MALE.—Length about 10 mm.; wing 9 mm.; antenna about 3 mm.

FEMALE.—Length about 10-11 mm.; wing 8.5-9 mm.

Described from alcoholic materials. Frontal prolongation of head light brown, nasus elongate; palpi light brown, long, from about two-thirds to three-fourths the antennae. Antennae with three proximal segments light brown, remainder black; flagellar segments only feebly incised, longer than the verticils; terminal segment very small, short-oval. Head above dark-brownish gray, paler brown beneath.

Pronotum yellowish brown, scutum narrowly dark brown medially. Mesonotal praescutum brownish yellow with three blackened stripes, the median one broad in front, narrowed behind, vaguely divided on posterior part, not reaching the suture; lateral stripes virtually continuous across suture with a major blackening on scutal lobe; a narrow continuous black central stripe on scutum and scutellum, mediotergite dark brown. Pleura chiefly pale, with major

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darkened areas on anepisternum and sternopleurite. Halteres pale, knob infuscated. Legs with coxae yellow, their bases narrowly and vaguely darkened; trochanters yellow; femora and tibiae yellow, tips narrowly dark brown; tarsi brownish black, claws simple. Wings grayish white, clearer in the obliterative areas at cord; centers of cells of outer radial field slightly more darkened; stigma light brown; veins dark brown. Macrotrichia of veins relatively sparse, the extreme condition including outer end of R_{4+5} , all outer medial veins, and tips of Cu_1 and 2nd A , in some specimens the outer veins virtually glabrous.

Abdominal tergites in male obscure yellow with a narrow continuous brownish black central stripe, the lateral lines interrupted at base and apex of each segment to produce elongate dashes; sternites yellow, with a broad entire black central stripe; in the females the darkened pattern narrower and paler. Male hypopygium with posterior border of tergite having a deep V-shaped notch, the sides of the emargination darkened and thickened, apex of each lobe produced into a slender blackened spine. Ninth sternite with a small arcuated blackened lobe, the free outer half with numerous short yellow setae. Apex of basistyle produced into a slender arm, tip obtuse, sides with long black setae. Outer dististyle long-oval, with conspicuous setae; inner style with beak slender, lower beak lacking; region of outer basal lobe produced into a hornlike structure, curved and narrowed to an acute spine, outer surface with long yellow setae; sensory area extended into a linear series comprised of six elements placed at base of outer basal lobe. Phallosome with central plate depressed, on either side at near midlength with a small slender recurved spine, with a smaller median spine more distally.

HABITAT.—Idaho (Butte County).

HOLOTYPE, ♂, Craters of the Moon National Monument, June 30, 1965 (D. S. Horning). ALLOTOPOTYPE, ♀, with the holotype. PARATOPOTYPES 4 ♀♀, with the types, July 3-17, 1965.

I am pleased to dedicate this species to Mr. Donald S. Horning, Jr., who has conducted a study of the fauna and flora of the Craters of the Moon National Monument. The most similar species include *Tipula* (*Pterelachisus*) *imbellis* Alexander and *T. (P.) mandan* Alexander, which differ conspicuously in all details of hypopygial structure. All three species have the basistyle produced and with the outer basal lobe of the inner dististyle variously modified.

Tipula (*Lunatipula*) *mecotrichia*, n.sp.

Belongs to the *albofascia* group, allied to *cladacantha*; general coloration of mesonotum yellowish gray, praescutum with four reddish-brown stripes; male hypopygium with each tergal lobe produced caudad into a slender blackened point; inner dististyle with beak very short, base of dorsal crest with very long setae, outer basal lobe bilobed, each lobe again divided, the posterior one into spines; eighth sternite with each lobe densely provided with long delicate setae and with three enlarged spinoid bristles.

MALE.—Length about 13-13.5 mm.; wing 15.5-16.5 mm.; antenna about 5-5.3 mm.

FEMALE.—Length about 14 mm.; wing 16 mm.

Frontal prolongation of head about equal in length to the remainder, obscure yellow, narrowly darker above, without a nasus; palpi black. Antennae with scape and pedicel yellow, flagellum black; flagellar segments slightly exceeding their verticils, basal enlargements small. Head light gray, more yellowed at occiput, vertex with a capillary dark brown median stripe; setae of vertex short.

Pronotum brownish yellow, narrowly darkened medially. Mesonotal praescutum with the ground yellowish gray, clearer gray laterally, disk with four reddish-brown stripes, the intermediate pair with the broad interspace more yellowed; scutum gray, each lobe with two reddish-brown areas; scutellum and postnotum brownish-yellow, heavily gray pruinose, especially the latter. Pleura brownish gray, dorsopleural region yellowed. Halteres with stem yellowed, orange at base, knob blackened, apex pale. Legs with coxae obscure yellow; trochanters yellow; femora and tibiae obscure yellow, tips narrowly darkened; tarsi light brown basally, passing into brownish black; claws with a stout triangular tooth. Wings brownish-yellow. prearcular and costal regions clearer yellow; stigma small, medium brown; obliterative band at cord extending into base of cell M_3 ; veins brown, yellowed in the brightened fields. Venation: petiole of cell M_1 variable, from subequal to about twice m ; $m-cu$ on M_1 just beyond base.

Abdomen brownish yellow, tergites with three narrow brown stripes, the lateral and posterior borders of segments narrowly gray; sternites reddish brown; hypopygium large, subglobular, castaneous. Ovipositor with cerci relatively short, tips slightly decurved, hypovalvae broad. Male hypopygium with each tergal lobe extended caudad into a slender blackened point, the margin microscopically roughened. Lobe of ninth sternite simple, with relatively short setae. Inner dististyle with beak very short, lower beak oval; setae at base of the long compressed dorsal crest very long and conspicuous; outer basal lobe bilobed, each lobe again divided, the anterior one with the points triangular, the posterior lobe extended into two divaricate slender spines. Eighth sternite with conspicuous semidetached lateral lobes, each with three major fasciculate setae, the outer margin fringed with abundant smaller yellow setae.

HABITAT.—California (Fresno County).

HOLOTYPE, ♂, Kings Canyon, along Route 180, at 10-mile Creek, 3,900 feet, June 1, 1963 (C. P. Alexander). ALLOTOPOTYPE, ♀, May 31, 1963. PARATOPOTYPES, 4 ♂♂, with types, May 31-June 1, 1963; occurred in dense thickets near the bridge.

Tipula (*Lunatipula*) *mecotrichia* is most closely related to *T.* (*L.*) *cladacantha* Alexander and *T.* (*L.*) *cladacanthodes* Alexander, differing conspicuously in the male hypopygium, particularly the ninth tergite, ninth sternite, inner dististyle, with its outer basal lobe, and the eighth sternite.

Dicranota (Dicranota) bernardinensis, n.sp.

General coloration gray, the praescutum with three stripes, the broad central one blackened; knobs of halteres infuscated; wings whitened, the long-oval stigma brown, *Sc* long, *Sc*₁ ending about opposite the supernumerary crossvein in cell *R*₁; male hypopygium with lateral tergal arms distinctive, appearing as a flattened blade that splits into two long narrow appressed spines; interbase broadly dilated at near midlength, thence extended into a long spine; apical lobes of basistyle unequal, both with spinoid setae.

MALE.—Length about 6 mm.; wing 6.2 mm.; antenna about 0.85 mm.

Rostrum dark gray, palpi black. Antennae short, black throughout; proximal flagellar segments oval, the outer ones more slender and elongate, terminal segment subequal to the penultimate. Head dark gray.

Pronotum dark gray. Mesonotal praescutum gray, with three stripes, the broad central one conspicuously blackened, not attaining the suture, lateral stripes dull pruinose; remainder of notum and pleura gray pruinose. Halteres whitened, the outer half of knob infuscated. Legs with coxae brownish gray; trochanters obscure yellow; femora and tibiae light brown, tarsi darker brown. Wings whitened, the long-oval stigma brown, distinct; veins brown. Venation: *Sc* long, *Sc*₁ ending nearly opposite the supernumerary crossvein in cell *R*₁; *R*₂₊₃₊₄ longer than basal section of *R*₅; *m-cu* beyond midlength of *M*₃₊₄.

Abdomen, including the hypopygium, brownish black. Male hypopygium with the tergite large, transverse, the lateral arms distinctive, each extended into a large flattened blade that splits into two long slender appressed points, median tergal margin broadly and very gently convex with strong setae from conspicuous tubercles. Basistyle with interbase very large, generally as in *Dicranota (Rhopidolabis) subsessilis* and some others, broadly dilated at near midlength, thence extended into a long spine; apex of basistyle bilobed, one lobe subglobular, with very sparse spinoid setae, the second lobe longer and more slender, elongate-oval, with more numerous spinoid setae. Dististyle gently arcuated, at apex with several long setae. Aedeagus not blackened.

HABITAT.—California (San Bernardino County).

HOLOTYPE, ♂. Thurman Flats, Mill River, 3,400 feet, May 11, 1963 (C. P. Alexander).

This is the first record of occurrence of a member of the typical subgenus from California, the only other regional species being *Dicranota (Dicranota) parvella* Alexander, of Oregon, which is quite distinct from the present fly in hypopygial characters. The structure of the lobes of the ninth tergite is different from that of any member of the genus so far made known.

Limnophila (Idioptera) nearctica, n.sp.

Size large, wing of male to 10 mm.; antennae of male long, nearly two-thirds the wing; wings pale yellow with a solidly darkened brown pattern, the areas before cord broken, not forming a continuous band as in some other species.

MALE.—Length about 10-11 mm.; wing 9.5-10 mm.; antenna about 6-6.3 mm.

Rostrum brownish yellow, mouthparts and palpi black. Antennae of male very long, nearly two-thirds the wing; scape and pedicel brown, flagellum black; segments elongate, with dense white erect setae that are about half as long as the sparse black verticils. Head brownish gray, sparsely dusted with yellow pollen; anterior vertex carinate.

Pronotum brownish gray, pretergites obscure yellow. Mesonotal praescutum dark gray with four obscure more blackened stripes, centers of scutal lobes similarly darkened; posterior scutal callosities, scutellum and mediotergite light gray, pleurotergite more yellowed. Pleura with mesepisternum clear gray, the remainder paler, grayish yellow. Halteres with stem yellow, knob infuscated. Legs with coxae and trochanters yellowed; femora yellow, tips broadly black; tibiae yellow, bases narrowly, tips slightly more blackened; basitarsi yellowed, outer segments more infuscated. Wings pale yellow, prearcular and costal fields more saturated yellow, conspicuously patterned with brown, the areas solid, not pale brown with darker margins as in *mcclureana*; disconnected dark areas at arculus, on *R* before mid-distance to origin of *Rs*, cord, outer end of cell 1st *M*₂, and broad seams over origin of *Rs*, supernumerary crossvein in cell *M* and tip of vein 2nd *A*, all disconnected; further brown marginal darkenings at ends of longitudinal veins, including the narrow wing tip; veins brownish yellow, darker in the pattern areas. Venation: petiole of cell *M*₁ longer than the cell; in holotype, the posterior end of the crossvein in cell *M* is atrophied.

Abdomen brownish yellow, the two subterminal segments blackened to form a narrow ring, hypopygium yellowed. Male hypopygium with outer dististyle glabrous, gently curved to the acute tip, inner style with erect pale setae. Gonapophysis terminating in an acute spine, the outer margin beyond midlength with one or more weak spinules.

HABITAT.—Canadian North West territories.

HOLOTYPE, ♂, Aklavik, District of Mackenzie, June 27, 1931 (Owen Bryant). PARATOPOTYPES, ♂♂, June 23-July 15, 1931.

There are six species in the subgenus *Idioptera* Macquart, including besides the present fly, *Limnophila (Idioptera) fasciata* (Linnaeus, *L. (I.) macropteryx* Tjeder, and *L. (I.) pulchella* (Meigen), of northern Europe, and *L. (I.) fasciolata* Osten Sacken and *L. (I.) mcclureana* Alexander, of northern North America. The present fly is the largest of the known species, being readily told from the others by the wing pattern and by the length of the antennae. In *pulchella* the females are brachypterous, the wings being less than

one-fifth the size of those of the male. The female sex is unknown in *mcclureana* and in the present fly.

Rhabdomastix (Sacandaga) hynesii, n.sp.

Allied to *trichophora*; general coloration of praescutum and scutum yellow, conspicuously patterned with light brown, the ventral pleura more heavily darkened; antennae with scape yellow, the enlarged pedicel black; head brownish yellow with a conspicuous dark brown central stripe; wings grayish yellow, the prearcular and costal fields pale yellow; macrotrichia of outer radial veins excepting R_5 sparse or lacking; *m-cu* at or near midlength of M_{3+4} ; male hypopygium with outer dististyle long and narrow, parallel-sided for most of the length, terminating in a strong appressed spine; apices of gonapophyses dilated into long narrow blades.

MALE.—Length about 6.5-7 mm.; wing 6-6.5 mm.; antenna about 1.3-1.4 mm.

Described from alcoholic materials. Rostrum yellow, palpi darker. Antennae with scape yellow, the large pedicel black, flagellum brownish black; proximal flagellar segments short and crowded, the remainder long-cylindrical, shorter than their longest verticils. Head brownish yellow to brown, posterior vertex with a broad conspicuous dark brown central stripe, extending from the low tubercle to the occiput, narrowed behind.

Prothorax yellow. Mesonotal praescutum yellow with three conspicuous light brown stripes, the median one darker at anterior end; scutum yellow, each lobe with a single light brown area that is confluent with the lateral praescutal stripe; remainder of notum light yellow, weakly darkened posteriorly. Pleura yellow with a small V-shaped brown area between the propleura and mesepisternum and along the suture between the anepisternum and sternopleurite; ventral sternopleurite and meron conspicuously dark brown. Halteres pale yellow. Legs with coxae yellow, anterior face of fore pair weakly darkened; trochanters yellow; remainder of legs yellowish brown. Wings tinged with grayish yellow, the prearcular and costal fields pale yellow; stigma very pale brown, scarcely evident; veins light brown, more brownish yellow in the brightened fields. Macrotrichia of veins relatively sparse, lacking on *Sc*, *Rs*, R_{2+3+4} , R_3 and R_4 ; a scattered series over the entire length of distal section of R_5 ; sparse trichia at ends of outer medial veins, more extensive on M_{1+2} . Venation: *Sc* relatively long, Sc_1 ending about opposite three-fourths *Rs*, Sc_2 faint but present, Sc_1 alone longer than *m-cu*; R_{2+3+4} subequal to R_4 ; distal section of M_{1+2} arched; *m-cu* at near midlength of M_{3+4} ; vein 2nd *A* sinuous at near midlength.

Abdomen yellow, the median area of first and second tergites brown, succeeding segments with bases pale brown; hypopygium yellow. Male hypopygium with outer dististyle long and narrow, parallel-sided for most of the length, terminating in a strong appressed spine, outer margin with much smaller denticles; inner style

stout, its outer end narrowed. Apex of each gonapophysis dilated into a long narrow blade that is about twice as wide as the stem.

HABITAT.—California (Amador and Sierra Counties).

HOLOTYPE, alcoholic ♂, Sierra County, without more exact data, June 26, 1965 (C. D. Hynes). PARATYPE, alcoholic ♂, Foster Meadow, Amador County, July 2, 1965.

The species is named for Dr. C. Dennis Hynes who discovered it and many other new and rare species of crane flies. It is closely related to *Rhabdomastix* (*Sacandaga*) *megacantha* Alexander and *R. (S.) trichophora* Alexander which are similar in general appearance being most readily distinguished by details of coloration, venation and vein trichiation, and in slight details of the male hypopygium.

Cheilotrichia (*Empeda*) *aklavikensis*, n.sp.

General coloration of head and abdomen yellow; thoracic praescutum, scutum and pleura chiefly dark brown; femora and tibiae yellow, the tips dark brown; wings relatively long and narrow, yellow, cell M_2 open by atrophy of basal section of M_3 , cell 2nd A narrow; male hypopygium with outer dististyle unequally forked, the inner arm again more shallowly emarginate, with several blackened spines; apex of phallosome with margin nearly truncate or very slightly emarginate.

MALE.—Length about 4 mm.; wing of holotype 4.4 x 0.8 mm.

FEMALE.—Length about 4.5-5 mm.; wing 4.5-5 mm.

Rostrum yellowish brown, palpi dark brown, antennae with scape yellow, remainder dark brown; flagellar segments short-oval. Head with front and anterior vertex very pale yellow, posterior vertex darker yellow, the central area slightly infuscated; anterior vertex broad, eyes small.

Pronotum brownish yellow, pretergites clearer yellow. Mesonotal praescutum chiefly dark brown with a vague obscure yellow central vitta; scutal lobes similarly dark brown; scutellum and postnotum obscure yellow. Propleura reddish brown; mesepisternum brown, the posterior pleurites more brownish yellow. Halteres with stem yellowed, knob brown. Legs with coxae and trochanters yellowish brown; femora and tibiae yellow, tips narrowly dark brown; femora chiefly dark brown, the proximal half or more of basitarsi obscure yellow. Wings relatively long and narrow, as shown by the measurements of the type; ground color yellow, the prearcular and costal fields clearer yellow; veins pale brown, clear yellow in the brightened fields. Venation: Sc_1 ending some distance beyond origin of R_s ; the latter subequal in length to petiole of cell R_3 ; vein R_3 oblique; R_4 subequal to and in direct alignment with R_{3+4} ; cell M_2 open by atrophy of basal section of M_3 ; $m-cu$ at fork of M , cell 2nd A narrow.

Abdomen of male orange yellow, including hypopygium; in some females the abdomen much darker, ovipositor very large. Male hypopygium with outer dististyle unequally forked, the longer outer

arm a narrow blade, inner arm shallowly bifurcate, its outer branch including a cluster of several blackened spines from a common base. Phallosome with apex nearly truncate to very slightly emarginate, the broad lateral arms with two or three protuberances.

HABITAT.—Canadian North West territories.

HOLOTYPE, ♂, Aklavik, District of Mackenzie, July 1, 1931 (Owen Bryant). ALLOTOPOTYPE, ♀, July 9, 1931. PARATOPOTYPES, 4 ♀ ♀, July 1-18, 1931.

There are several species of the subgenus in the Pacific Northwest (Alexander, C. P., 1955, University of Michigan, Mus. Zool. Miscell. Publ. 90:13-16, figs. 1-5, 7-10), all being dark-colored flies with the hypopygia quite distinct. The venation of the present fly, with cell M_2 open by atrophy of basal section of vein M_3 provides a character unique in the subgenus.